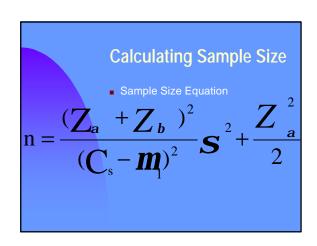


General Procedure Define the Sample Area Source Area Horizontal Stratum Develop A COC List Develop A Sampling Plan Establish the Closure Level Develop PECs Specify Error Levels Take Samples

Sample Size Judgmental Sampling Worst Case Scenario As Many As It Takes Statistical Sampling Adequate To Satisfy the Requirements of the Test Being Used How close Is the Mean To the Closure Level? How Much Variability Is There In the Data?



Selecting Sample Locations Sample Design What Question Are You Trying To Answer? If You Know the Question, the Design Process Becomes Easier Each Activity Should Contribute To Answering the Question Gathering Information Before Developing A Sample Design Yields A Better Product

Selecting Sample Locations Presampling Activities Random Or Judgmental? Random Is Often Used when There Is Little Prior Knowledge There Are Methods To Control the Sample Size Of Random Samples Judgmental Sampling Requires Prior Knowledge, Experience, and Trustworthiness, and the Sample Size May Be Large Bad Judgement Yields Bad Results

Grid Sampling

- Grid Size
 - Varies According To Circumstances
 - ◆ Small In Highly Contaminated Areas
 - ◆ Larger in the "Back 40"
 - ◆ Generally No Larger Than Ten Feet If Contamination Is Suspected
 - All Intersections (Including Along the Edges) Count As Grid Points

Grid Sampling

- It Is Often Difficult To Locate the Selected Grid Points In the Field
- Sometimes Buildings, Roads, etc.
 Interfere With Sample Locations
- If You Have No Information To Use In Calculating the Sample Size, You May Use the Cube Root Of the Number Of Grid Points For Preliminary Sampling
- Check Your Sample Size Using the Sample Size Calculation
- Remobilization May Be Required

Ranked Set Sampling

- Gives A Better Estimate Of the Mean Than A Simple Random Sample
- Can Be Used Under Certain Conditions
- Not Applicable For All Sites and Contaminants
- Based On Dividing the Population Into Subpopulations

Applying RSS

- Randomly Select Sample Units From the Population
- Randomly Allocate the Sample Units Into Groups
- Rank the Units Within Each Group
- Choose Samples To Be Included In the Analysis
- Repeat the Steps Until An Adequate Sample Size Is Obtained
- The Representativeness of the Sample Is Increased

Ranking Criteria

- The Ranking Mechanism Is Critical
- Does Not Have To Measure Accurately
- Has To Measure Well Enough To Rank Samples Low, Medium, High
 Sometimes It Is Possible To Use A Surrogate